

Left Coast Engineering

a dba of Park-Tours, Inc.
810 S. Escondido Blvd.
Escondido, CA 92025
<http://Left.Coast.Engineering>



You Think It. We Build It.™

CAPABILITIES:

- Custom Product Design
- Audio
- Digital Design
- Firmware/Software
- Fluidics
- Intellectual Property
- Machine Learning
- PCB Design
- Power Supplies
- RF/Wireless
- Sensors
- Redesigns for supply chain parts availability
- Lo-Vol Production Build
- Rapid Prototyping
- Reverse Engineering
- SWaP Design

PATENTS: Founder is inventor on 25+ issued.



Company Designators

DUNS: 157648077

SAM: KJSDS7MWALV5

CAGE: 706Z6

NAICS:

334220	334412	334418
334513	334515	334516
425110	511210	518210
519190	541330	541420
541511	541512	541690
541715		

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Left Coast Engineering (LCE) is a full-service, custom product design company focused on electronics and research & development (R&D). LCE has supported more than 250 designs from concept to production-ready, which includes: product definition, certification testing, production test, and validation/verification. LCE supports low-volume production builds, in-house.

Differentiators:

- Intellectual property development, protection, expert witness resources
- DCAA-approved accounting system
- NIST 800-171 compliant.
- JCP-approved for DOD file access
- Eligible for Sole Source Direct Awards, SBA-Certified WOSB/EDWOSB
- SDB – Small Disadvantaged Business, self-certified in SAM
- Founded in 1999

Core Competencies: Electronic & Mechanical Design

Hardware – Power, Embedded, Audio, FPGA, PCB Design, Keypads/User Interfaces, Laser Systems

Software – User Interface, Embedded Firmware (Bare Metal or OS - Linux, Free RTOS), Apps (PC or Phone - Android, iOS), Protocols, Low Power/Battery

RF/Wireless – Discreet RF Line-ups, Antenna Design, Proprietary Wireless Protocols, Module Design, Standard Protocol Implementations, Satellite

Mechanical – CAD, Dynamic Stress Analysis, Thermal Modeling, Portable/Rack-Mount, 3D-print

Fluidics – Pumps, Valves, Vacuums, Pressure Sensing, Flow Sensing

Optics – Cameras, Lensing, Image Processing, Particle Detection, Distance Measurement

Sensors – Flow (Ultrasonic, Thermal), Environmental, Intrusion Detection, Light/Photon, Audio, Level, Salinity

Robotics – Motor Control, Conveyors, Automation, ROS

Machine Learning – Data Accumulation/Storage/Post-Processing, Trend Analysis, Event Detection, Modeling

Key Personnel:

Robert Baranowski – Founder/president with more than 30 years of electrical design experience for DOD, medical and commercial projects; extensive hardware design experience in wireless, power, audio, controllers, location-aware and sensors. Software design/development experience involves user interfaces, drivers and applications. Inventor on more than 20 issued patents.

Amy Archipov – Production manager with more than 25 years of manufacturing and industrial engineering expertise in electronics. Experienced with supply chain management and project management.

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PROJECT
EXAMPLES

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Military and Government: As a prime and 2nd-tier contractor, LCE has supported more than 45 electronic designs that are used in highly classified systems for multiple agencies. With a proven track record of solving intricate, difficult, high-tech R&D challenges, LCE is able to consistently provide innovative solutions for its customers. Projects range from several months to several years; highlights include:

- **Positioning Using Magnetic Anomalies Correlation of Earth (PUMACE)** – defined a location-determination algorithm able to provide location accuracy at a much finer scale than magnetic data variation; technology is a navigation alternative in the absence of GPS. *Challenge – overcoming widely accepted industry standards from the last 40 years with an alternate approach that provides better results.*
- **GPS (Global Positioning System) Location-Aware Wireless Modem** – small, standalone, for field deployment including satellite and Local Area Network communications. *Challenge – interference between different on-board radios and tricky thermal issues.*
- **High Powered DC-DC Ruggedized Radio Power Supply** – Designed and certified the electronics for vehicular deployment. *Challenge – creating a robust input circuit capable of performing circuit-breaker type functionality while not responding to transients seen from the typical “dirty” power sources.*
- **Precision DC-DC Rackmount UUV Power Supply** – Very tight tolerance power supply for tethered UUV without remote voltage sense. *Challenge – tight tolerance needed to keep UUV voltage the same regardless of current load over long tether.*
- **Automated Fluidics System** – Designed and delivered complete custom units to support Navy MetCal labs, encapsulating sequences to maintain simple operation of a complex system. *Challenge – design of simple UI that is easy to operate plus allows configuration through a simple programming interface.*

Commercial: LCE has supported hundreds of product designs into manufacturing for a broad range of categories. As each new set of requirements arises, the LCE team uses their extensive background to find the optimal, most effective way to get the job done.

- **Portable TEMT Device** – Designed and built wearable units for a study on the use of RF in the treatment of Alzheimer’s Disease. Despite limited requirements, created electrical and interface specs, exceeding specifications. Phase I clinical trials with positive preliminary efficacy results; currently Phase II development.
- **Electric Tankless Water Heater** – Developed next generation water heaters with advanced functionality including self-diagnostics and remote control/monitoring. Created product industrial design, electronics partitioning, breakthrough flow sensing, firmware control, user interface, back-end server, phone app. Created unique design elements carried through the marketing of the product and implemented an intellectual property strategy with patent applications currently in pursuit.
- **Wireless Connectivity for Smart Home Appliances** – Provided low-cost hardware products that provide connectivity for various smart home devices. Management of supply chain issues over the course of 5 years of production of more than 2 million devices.
- **Dynamic Energy-Reduction Devices** – An array of power-consuming devices that dynamically reduce power in response to a Flex Alert or other external request for power consumption reduction.
- **Automated Soft Drink Dispensing System** – Supported several generations of an automated drink dispensing system for the fast-food industry. Worked on all aspects of the product design, including hardware, firmware, and mechanical systems. Built and deployed several functioning systems for customer field testing. Overcame many electro-mechanical, EMI, and system integration issues.
- **Liquid Level Tracking Systems** – Created several generations of ultra-low-cost, liquid level detection for commercial deployment. First generation employed low profile, highly accurate scales for weighing liquid. Faced challenges of accurate measurements captured 24/7 without taring. Wirelessly communicated measured data without having wireless transmissions corrupt the measurements. Second generation uses ToF sensors for liquid level measurement with data also being sent wirelessly to back end. Overcame many system integration issues including dynamic calibration and dealing with moisture buildup.